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Prepared by O. V. Wells, Agricultural Adjustment Administration, November, 1934.

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A 94 F 0 1.94

JUL 23 1938

FOOD CONSUMPTION, CONSUMER INCOMES AND CONSUMER EXPENDITURES FOR FOOD

The relation between the variation in the volume of income received and spent by urban consumers and the amount of food consumed can best be understood by considering the relations between the variation in the total volume of consumer incomes and food consumption, between the variation in the total volume of consumer incomes and total expenditures for food, and between the average level of personal or family incomes and the kind and amount of food consumed.

Table 1.- Per Capita Income of Urban Consumers and Average Per Capita Consumption of Some Important Food Products, 1920 to 1933.

Year	Income Per Capita	Product or Group						
		Wheat Flour	Lean Meat 1/	Milk and Cream	Butter	All Potatoes	Sugar	Fresh Fruit and Vegetables
	1920-33=100	Consumption in Pounds Per Capita						
1920	120	176	-	-	-	158	87	311
1921	93	174	-	-	-	179	89	357
1922	96	177	-	-	-	157	95	272
1923	110	175	-	-	-	194	100	345
1924	105	178	110	315	18	171	94	339
1925	110	179	106	315	18	171	104	344
1926	114	180	104	330	18	142	104	359
1927	111	181	105	337	18	152	104	372
1928	112	178	104	346	17	166	99	329
1929	114	177	102	345	17	183	104	342
1930	102	173	100	350	17	150	100	348
1931	85	174	102	358	18	145	99	360
1932	66	171	101	351	18	160	100	349
1933	62	173	106	336	18	159	95	319

1/ Lean meat, excluding poultry and fish.

As has already been indicated, the average consumption per capita of the principal foodstuffs remained almost constant relative to the variations in

consumer incomes from 1919-20 to 1932-33. For convenience, an index of consumer income per capita and the consumption per capita of several of the principal food products are compared in Table 1.[1] Without exception, the several consumption series fail to show any clearcut relation with the income index. While the per capita income of urban consumers dropped 43.5 per cent from 1928-1929 into 1932-1933, the average per capita consumption of wheat flour decreased only 3 per cent, of potatoes only 7.5 per cent, and of sugar only 4 per cent. And the average per capita consumption of lean meat, milk and cream, and fresh fruits and vegetables remained almost unchanged, while the consumption of butter increased about 6 per cent. Almost the same results will be obtained from a similar analysis for the foods not listed in Table 1, or for the period 1921-1922 to 1928-1929.[2]

The conclusion that there has been no significant relation between the variation in the average per capita income of urban consumers and average per capita consumption of food must lead to the question: Why?

1/ The index of consumer incomes used in Tables 1 to 3 is an index of the income of urban consumers which was calculated by O. V. Wells and L. H. Bean, for the period 1919 through 1933. This index includes a portion of the income paid out as interest and dividends and all wages and salaries paid to workers in factories, the building, service, and public utility industries, railroads, mining, wholesale and retail trade, and in governmental work. The conclusions reached, however, are not dependent upon the income index used since almost exactly the same results would be obtained if either an index of gross corporation income or some reliable index of national income, excluding farm income, were used.

2/ An analysis of the changes in food consumption from 1921-22 to 1928-29 will show a small net increase. This increase is apparently due in part to a natural recovery from a slight drop in the per capita consumption of food through the war period, as well as to the increase in the average per capita income of urban consumers up to 1928-1929.

The stable character of both the average level and the average composition of the domestic consumption of food is easily explained. Since food is an essential requirement, it is probable that the average consumer or family will usually tend to cut or to expand expenditures for semi-luxury and durable goods to a greater extent than for food as consumer incomes change from period to period. And, even more important, the organization of the agricultural

Table 2.- Per Capita Income of Urban Consumers and Prices of Food Products at the Farm and in the Wholesale and Retail Markets, 1920-1933

Year	Income Per Capita	Indexes of Food Product and Food Prices 1/		
		At the Farm	At Wholesale	At Retail
		1920-1933 = 100		
1920	120	160	150	132
1921	93	101	99	104
1922	96	94	96	95
1923	110	96	101	98
1924	105	98	99	97
1925	110	118	109	107
1926	114	119	109	111
1927	111	112	105	107
1928	112	115	110	108
1929	114	117	109	111
1930	102	100	99	107
1931	85	69	81	86
1932	66	50	67	69
1933	62	53	66	67

1/ Prices at wholesale as reported by the Bureau of Labor Statistics; and prices for a comparable quantity of foods and food products, at the farm and at retail, as reported by the Department of Agricultural Economics and Farm Management, Cornell University.

plant is such as to usually result in an almost constant volume of production without regard to the prices received, so that the volume of food products moving to market is usually sufficient to provide an abundant supply of food. As a result, the prices of food and of the agricultural commodities used for food are usually determined by the demand rather than by the supply side of the supply and demand equation.

As shown in Table 2, the changes in the prices of food products at the farm and in both the wholesale and retail markets are directly related to the changes in the per capita income of urban consumers. From 1920 to 1921, the prices of foods and food products decreased 37 per cent at the farm, 34 per cent at wholesale, and 20 per cent at retail as compared with a decrease of 22 per cent in the per capita income index. From 1922 to 1929, the prices of the same products increased 24 per cent at the farm, 14 per cent at wholesale, and 17 per cent at retail as compared with an increase of 19 per cent in the income index. And from 1929 to 1933, the prices of the same products decreased 55 per cent at the farm, 40 per cent at wholesale, and 40 per cent at retail as compared with a 46 per cent decrease in the income index. In general, farm prices were the most responsive and retail prices the least responsive to changes in the average per capita income of urban consumers through the period under consideration.

On the average, an increase or a decrease of 11 to 11.5 per cent in the income index was associated with a corresponding increase or decrease of 10 per cent in the price of food at retail. Or, if urban consumers had spent exactly the same proportion of their incomes for the same kind of food in 1933 as in 1929, they would have only had to decrease their average per capita consumption by 10 per cent despite the 46 per cent decrease in the average income per capita. There are, however, several reasons why the theoretical decrease in food consumption between 1929 and 1933 should not be as great as 10 per cent. As already indicated, it is probable that a somewhat greater proportion of the average income per capita may have been spent for food in the second period than in the first. It is also reasonable to suppose

that the index of retail prices used did not drop as much as the actual prices paid by all consumers living in cities and villages, since it is constructed from prices collected in the larger cities such as Birmingham, Chicago, and Portland, Oregon. In addition, it is probable that per capita consumption of food by the 25 per cent of the population that live on farms rather than in cities and villages is maintained at a stable level.

Table 3.- Urban Consumer Incomes and Estimated Total Expenditures for Food and Food Products Consumed in Cities and Villages, 1920-1933. 1/

Year	Urban Consumers Income	Total Expended for Food: At Farm Prices	Total Expended for Food: At Retail Prices	Total Expenditures at Retail: Lean Meat 2/	Milk and Cream	Butter Cheese Ice Cream	Bakery Products	Poultry and Eggs 3/
	Average 1920-1933 = 100							
1920	105	141	115	103	103	102	-	116
1921	84	91	93	86	92	84	89	94
1922	88	86	87	89	86	84	-	90
1923	103	90	92	100	93	103	92	93
1924	101	94	93	103	97	104	-	97
1925	108	116	105	113	101	114	103	111
1926	114	120	111	121	104	116	-	119
1927	114	116	110	117	107	121	114	110
1928	117	122	113	121	111	123	-	124
1929	122	126	118	119	115	125	124	130
1930	111	109	117	105	114	109	-	108
1931	94	76	94	88	101	85	97	85
1932	72	55	76	70	88	66	-	62
1933	69	58	74	65	88	64	-	55

1/ Subject to revision. 2/ Excluding poultry and fish. 3/ Value at farm.

From what has been said with regard to the consumer income-price relationship, it is evident that the total volume of urban consumer incomes and the total expenditures of urban consumers for food must be closely related. This relation is shown in Table 3, where the estimated total urban expenditures for food at retail, the estimated total value of the same products at

the farm, and the estimated retail value or expenditures for several important groups of foods are given. As would be expected, the total urban expenditures for food, which have been estimated on the assumption of a fixed consumption per capita, are not as variable as the total income of urban consumers, while the total value of the same products at the farm are more variable. As indicated, the total retail expenditures for lean meats and

Table 4. - Estimated Per Capita Consumption of the Principal Groups of Foods Relative to the Per Capita Expenditures for Food Among Urban Families, 1934 1/

Annual Food Expenditure Per Capita	Grain Products	Lean Meat: Fish: Poultry	Milk	Butter	Eggs	Sugar	All Potatoes	Fruits and Vegetables
Dollars	Average consumption in pounds per capita							
30-60	160	75	100	7	10	30	90	100
60-90	175	90	180	10	20	40	110	185
90-120	175	110	240	15	27	55	135	295
120-150	175	140	290	20	35	60	145	370
150-180	190	165	330	25	42	65	145	445
180-210	190	180	350	30	45	70	145	495
210-240	190	200	350	35	48	70	145	535

1/ Data supplied by Dr. H. K. Stiebeling, Bureau of Home Economics, U. S. Department of Agriculture. Summarized from family budget studies and adjusted to the retail price level of January 1934. Subject to revision.

for butter, cheese, ice cream, and oleomargarine combined show almost the same degree of variation as the income of urban consumers, the total expenditures for milk and cream are apparently not so variable, and the total expenditures for poultry and eggs may be somewhat more variable although it is probable that the variation is overstated in Table 3.

A close relation between the average income per capita or per family and the average per capita consumption of food is found when the consumption of food relative to the average income per capita or per family is studied. This relation is shown in Tables 4 and 5.

Table 5.- Estimated Per Capita Consumption of the Principal Groups of Foods Relative to the Per Capita Expenditures for Food among Farm Families, 1934 1/.

Annual Food Expenditure Per Capita	Grain Products	Lean Meat: Fish : Poultry	Milk	Butter	Eggs	Sugar	All Potatoes	Fruits and Vegetables
Dollars	Average consumption in pounds per capita							
30-60	285	40	250	10	15	25	100	110
60-90	225	80	350	20	20	50	200	220
90-120	225	120	450	25	35	70	250	310
120-150	225	160	550	30	45	80	275	415
150-180	225	180	600	35	50	85	300	510
180-210	225	220	600	35	50	90	275	590

1/ Data supplied by Dr. H. K. Stiebeling, Bureau of Home Economics, U. S. Department of Agriculture. Summarized from family budget studies and adjusted to the retail price level of January 1934. Subject to revision.

As the income per family, as measured by the average per capita expenditure for food, is increased the apparent per capita consumption of food is increased, although it is probable that the wastes in the preparation and consumption of food are also increased. And in addition, the proportional composition of the diet is changed since the consumption of fruits and vegetables is increased the most, the consumption of milk, butter, eggs, and lean meat at about an average rate, and the consumption of grain products, sugar and potatoes the least. In fact, as indicated in Table 5, the average per capita consumption of grain products is decreased among farm families as the expenditures per capita are increased.

An estimated distribution of income as between families in the different income classes is shown in Table 6. It is estimated that an income per family of at least $500 is required to support an expenditure of $30 to $60 and an income of at least $2500 to $3000 to support an expenditure of $180 $210 per capita for food.

Table 6.- The Number and Income of Families by Income Classes, 1929. 1/

Income Class	Families		Income	
	In thousands	Per cent of total	In millions	Per cent of total
	Number	Per cent	Dollars	Per cent
Under 500	2,102	7.7	19	-
500 to 1,000	3,797	13.8	2,919	3.8
1,000 to 1,500	5,754	20.9	7,197	9.3
1,500 to 2,000	4,701	17.1	8,167	10.6
2,000 to 2,500	3,204	11.6	7,153	9.3
2,500 to 3,000	1,988	7.2	5,433	7.0
3,000 to 3,500	1,447	5.3	4,678	6.1
3,500 to 5,000	2,225	8.2	9,188	11.9
Over 5,000	2,256	8.2	32,400	42.0
Total	27,474	100.0	77,116	100.0

1/ Data from AMERICA'S CAPACITY TO CONSUME, Brookings Institute, 1934.

Since the relative distribution of incomes between families is usually constant through any considerable period, it is possible for the general level of food consumption to remain constant as the per capita income of urban consumers is changed even though there is a direct relation between the average income per family and the average per capita consumption of food. If all incomes under $1500 per family could be materially raised, it is probable that the result would be a general increase in food consumption and a gradual change in the average composition of the food consumed, provided the price of food in the retail market were held constant.